



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/700,604

11/15/2000

Youn Soo Bae

2529-000047

8368

7590

05/06/2003

Harness Dickey & Pierce
PO Box 828
Bloomfield Hills, MI 48303

EXAMINER

LE, DANG D

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/700,604	BAE	
	Examiner	Art Unit	
	Dang D Le	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see paper dated 4/24/03, filed 4/29/03, with respect to claims 1-3, 5, and 7 have been fully considered and are persuasive. The final rejection of claims 1-3, 5 and 7 has been withdrawn as discussed with Mr. Gregory Schivley on 4/29/03. However, upon further consideration, a new ground(s) of rejection is made in view of Richter, Devol, and Sromin et al.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Richter (4,371,801).

Regarding claim 1, Richter shows a magnetic circuit for a rotating apparatus having a parallel structure or a skew structure of magnet pole pieces of magnets or armatures with respect to a shaft (12, Figure 1), comprising:

- A rotating shaft (12);

- A plurality of supporters (13) fixedly mounted in a perpendicular direction to the circumference of the rotating shaft;
- A rotor (10) having a plurality of magnets (14) rotated by attraction force and repulsion forces of a magnetic field, each magnet having a magnet pole piece (North or South) being arranged in parallel with respect to the shaft and located on an end of one of the plurality of supporters (13); and
- A plurality of armatures (stators) each having a coil (18), each coil being mounted at an interval outside the rotors and receiving induced magnetic flux of the rotors and the magnet pole pieces being arranged in parallel or in skew with the rotating shaft.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devol (2,994,023) in view of Morrill.

Regarding claim 1, Devol shows a magnetic circuit for a rotating apparatus having a parallel structure or a skew structure of magnet pole pieces of magnets or armatures with respect to a shaft (14, Figure 2), comprising:

- A rotating shaft (14);

- A supporter (12) fixedly mounted in a perpendicular direction to the circumference of the rotating shaft;
- A rotor having a plurality of magnets (16) rotated by attraction force and repulsion forces of a magnetic field, each magnet having a magnet pole piece (North or South) being arranged in parallel with respect to the shaft and located in the supporter, and
- A plurality of armatures (stators) each having a coil (22), each coil being mounted at an interval outside the rotors and receiving induced magnetic flux of the rotors and the magnet pole pieces being arranged in parallel or in skew with the rotating shaft.

Devol does not show a plurality of supporters fixedly mounted in a perpendicular direction to the circumference of the rotating shaft.

For the purpose of providing a provision of fastening the permanent magnets to the shaft in order to make a permanent magnet rotor, Morrill shows a plurality of supporters (bolts) fixedly mounted in a perpendicular direction to the circumference of the rotating shaft.

Since Devol and Morrill are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to mount the magnets with a plurality of supporters as taught by Morrill for the purpose discussed above.

Regarding claim 2, 3, and 5, it is noted that Devol also shows all of the limitations of the claimed invention.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Devol (2,994,023) in view of Morrill and further in view of Sromin et al.

Regarding claim 7, the claim is similar to claim 1 except that it further recites pair of magnets mount on ends of each support.

As discussed above, Devol and Morrill show all of the limitations of the claimed invention except for pair of magnets mount on ends of each support.

However, Sromin et al. use pair of magnets (36, 38) mount on ends of each support (30, Figures 1 and 2) for the purpose of increasing torque.

Since Devol, Morrill and Sromin et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to mount on ends of each support with a pair of magnets, with each pair containing magnets of opposite polarity, each magnet having pole faces extending parallel to the axial direction of the shaft and the polarity of adjacent magnet pairs being reversed with respect to each other as respectively taught by Morrill and Sromin et al. for the purposes discussed above.

Information on How to Contact USPTO

Application/Control Number: 09/700,604
Art Unit: 2834

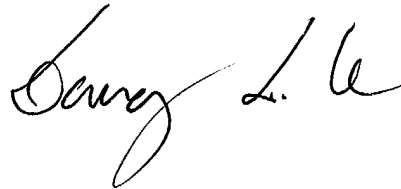
Page 6

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

April 29, 2003

A handwritten signature in black ink, appearing to read 'Dang D. Le', with a stylized flourish at the end.

**DANGLE
PRIMARY EXAMINER**